Executive Summary of Recommendations

SOMANZ
SOCIETY OF OBSTETRIC MEDICINE OF AUSTRALIA AND NEW ZEALAND

Part 2: Screening for women at risk of preeclampsia

Clinical question/Location in Guideline	Type of Recommendation	Recommendation	Rating of Recommendation
2. Screening for women at risk of developing preeclampsia			
2.1	Evidence based recommendation	Women should be screened for their risk of preeclampsia early in the pregnancy. At a minimum (in the absence of combined first trimester screening), risk stratification should be done based on maternal risk factors (maternal characteristics, medical and obstetric history) (Table 2.1).	1B
2.2	Evidence based recommendation	The use of a combined first trimester screen (combined maternal features, biomarkers and sonography) to identify women at risk of developing preeclampsia is conditionally recommended based on local availability and access to the required resources.	2B

Part 3(A): Prevention of preeclampsia (Pharmacological interventions)

Clinical question/Location in Guideline	Type of Recommendation	Recommendation	Rating of Recommendation
3A.1 Aspirin			
3A.1.1	Evidence based recommendation	Initiation of aspirin in women at high risk of developing preeclampsia, prior to 16 weeks gestation, is strongly recommended.	1B
3A.1.2	Evidence based recommendation	The use of 150mg/day of aspirin is recommended.	1B
3A.1.3	Evidence based recommendation	The use of bedtime aspirin is conditionally recommended.	2C
3A.1.4	Evidence based recommendation	Cessation of aspirin between 34 weeks gestation and birth is conditionally recommended. The exact timing of cessation should be based on individualised clinical judgment and informed, shared decision making with the women.	2B
3A.1.5	Evidence based recommendation	Universal aspirin in low-risk nulliparous women is conditionally recommended against. Informed, shared decision making with women is recommended where appropriate risk stratification is not possible.	2B
3A.1.6	Practice point	Counselling on the use of aspirin in pregnancy is recommended to improve adherence to aspirin in pregnancy (Information Sheet 3A.1).	PP
3A.2 Oral supplemental calcium			
3A.2.1	Evidence based recommendation	The use of supplemental calcium is strongly recommended in pregnant women with low dietary calcium intake (<1g/day).	1C
3A.2.2	Practice point	Assess dietary calcium intake prior to recommending oral calcium supplementation (Flowchart 3A.2)	PP
3A.2.3	Practice point	Consider assessing serum corrected calcium in those taking calcium oral supplementation (to ensure the absence of hypercalcaemia).	PP
3A.3 Oral omega-3 LCPUFA	Evidence based recommendation	The use of oral omega-3 LCPUFA supplementation for the prevention of preeclampsia is not recommended until more data are available.	2B

Part 3(A): Prevention of preeclampsia (Pharmacological interventions)

Clinical question/Location in Guideline	Type of Recommendation	Recommendation	Rating of Recommendation
3A.4 Garlic supplementation	Evidence based recommendation	The use of garlic supplementation for prevention of preeclampsia is not recommended until more data are available.	2D
3A.5 Oral antioxidants (vitamin C and E)	Evidence based recommendation	The use of oral vitamin C and E supplementation for prevention of preeclampsia is not recommended until more data on the risk of harm are available.	2B
3A.6 Oral magnesium	Evidence based recommendation	The use of oral magnesium supplementation for the prevention of preeclampsia, is not recommended until more data are available.	2C
3A.7 Progesterone	Evidence based recommendation	The use of progesterone for prevention of preeclampsia, is not recommended until more data are available.	2B
3A.8 Statin	Evidence based recommendation	The use of statin for prevention of preeclampsia is not recommended until more data are available.	2B
3A.9 Low Molecular weight Heparin			
3A.9.1 Low Molecular weight heparin in addition to aspirin for prevention of preeclampsia	Evidence based recommendation	The use of low molecular weight heparin (LMWH) in addition to aspirin for prevention of preeclampsia in women without a history of thrombophilia or APLS is conditionally recommended against. The decision to use LMWH in addition to aspirin should be individualised based on women's clinical and obstetric history and through shared-decision making.	2C
3A.9.2 Low Molecular weight heparin alone (without aspirin) for prevention of preeclampsia	Evidence based recommendation	The use of low molecular weight heparin (LMWH) alone (without aspirin) in women without a history of thrombophilia or APLS can be considered if a contraindication to aspirin is present. The decision to use LMWH (at a prophylactic dose) should be individualised based on women's clinical and obstetric history and through a shared, informed decision-making process. LMWH should not replace the use of aspirin in women without contraindications to aspirin.	2D
3A.10 Nitric Oxide	Evidence based recommendation	The use of nitric oxide (either in donor or precursor forms) for the prevention of preeclampsia is not recommended until more data are available.	2C
3A.11 Metformin	Evidence based recommendation	The use of metformin, specifically for the prevention of preeclampsia, is not recommended until more data are available.	2C
3A.12 Oral vitamin D	Evidence based recommendation	The use of oral vitamin D supplementation for the prevention of preeclampsia is not recommended until more data are available.	2B
3A.13 Oral Proton Pump Inhibitors (PPIs)	Practice point	The use of proton pump inhibitors for prevention of preeclampsia is not recommended until more data are available.	PP
3A.14 Clopidogrel	Practice point	The use of clopidogrel for prevention of preeclampsia is not recommended until human data are available.	PP

Part 3(B): Prevention of preeclampsia (Non-pharmacological interventions)

Clinical question/Location in Guideline	Type of Recommendation	Recommendation	Rating of Recommendation
3B.1 Exercise/ Physical activity			
3B.1.1	Evidence based recommendation	Moderate intensity exercise, in the form of aerobic, stretching and/ or muscle resistance exercises, for a total of 2.5-5 hours a week, as recommended as part of routine pregnancy wellbeing has the added benefit of reducing the risk of hypertensive disorders of pregnancy. Adherence to the current recommended exercise regimen for general pregnancy wellbeing is encouraged. (Information sheet 3B.1)	2D
3B.1.2	Practice point	Exercise regimen should be commenced early in the pregnancy.	PP
3B.2 Dietary salt restriction	Evidence based recommendation	Dietary salt restriction, for prevention of preeclampsia, is not recommended until more data are available.	2D

Part 4: Diagnosis of preeclampsia

Clinical question/Location in Guideline	Type of Recommendation	Recommendation	Rating of Recommendation
4.1 Urine assessment for proteinuria			
4.1.1	Evidence based recommendation	Urine dipstick can be used for initial screening, however, dipstick alone is inadequate to diagnose proteinuria in pregnancy. A confirmatory quantifying method of urine protein assessment (i.e. urine protein to creatinine ratio) should be used in women with clinical suspicion of preeclampsia.	2B
4.1.2	Evidence based recommendation	Urine protein to creatinine ratio (uPCR) with a cut off ≥30mg/mmol can be used to diagnose proteinuria in pregnancy.	1B
4.1.3	Evidence based recommendation	Urine albumin to creatinine ratio (uACR) with a cut off ≥8mg/mmol can be used an alternative if urine protein to creatinine ratio (uPCR) is not available to diagnose proteinuria in pregnancy.	2B
4.1.4	Practice point	Cut off for abnormal urinary protein excretion in multi-gestational pregnancy remains unclear and therefore urine PCR, ACR and 24-hour urine assessment should be interpreted with caution.	PP
4.1.5	Practice point	Repeated urinary protein assessment in women with proteinuria from preeclampsia (in the absence of other indications) is not recommended. There is inadequate data to determine the severity of preeclampsia or timing of birth based on urine protein assessment.	PP
4.2 Use of sFlt-1/PlGF ratio			
4.2.1	Evidence based recommendation	Utility of sFlt-1/PlGF (≤38) in ruling out preeclampsia within 1- 4 weeks of testing in women where there is a clinical suspicion of preeclampsia is conditionally recommended where a clinically validated ratio assessment is available in a timely manner.	2B
4.2.2	Evidence based recommendation	The use of the sFlt-1/PlGF ratio in diagnosing preeclampsia, determining fetal outcomes, severity of disease, timing of birth and its use in routine screening in asymptomatic women is not recommended until more data are available to support its use in these settings.	2D
4.2.3	Practice point	The sFlt-1/PlGF ratio should be used as an adjunct to clinical assessment. The use of the ratio should not replace clinical assessment and management decisions should not be made based on the ratio alone (Flowsheet 4.2).	PP
4.3 Use of PlGF-based testing			
4.3.1	Practice point	More data on the clinical application of PlGF-based testing in predicting preeclampsia in women with clinical suspicion of preeclampsia is required prior to clinical implementation of PlGF-based testing in Australia and New Zealand.	PP
4.3.2	Practice point	Use of the PlGF value (alone) from the sFlt-1/PlGF ratio assay (ROCHE COBAS) for the use of PlGF-based testing has not been clinically validated and is not recommended.	PP

Part 5: Management of chronic or gestational hypertension in pregnancy

Clinical question/Location in Guideline	Type of Recommendation	Recommendation	Rating of Recommendation
5.1 Blood pressure target in women with chronic or gestational hypertension	Evidence based recommendation	Women with gestational or chronic hypertension should have blood pressure control to a target of SBP≤135mmHg and a DBP≤85mmHg.	1C
5.2 Home BP monitoring (HBPM) in monitoring women with stable chronic or gestational hypertension			
5.2.1	Evidence based recommendation	Where appropriate, HBPM with the use of a validated blood pressure device can be utilised in women with chronic or gestational hypertension. The use of HBPM, however, should not replace the minimum recommended frequency of antenatal review according to the woman's parity and stage of pregnancy.	1B
5.2.2	Practice point	Compliance and technique with home blood pressure monitoring (Information sheet 5.2.1 and 5.2.2) should be reassessed at each review to ensure ongoing suitability.	PP

Part 5: Management of chronic or gestational hypertension in pregnancy

Clinical question/Location in Guideline	Type of Recommendation	Recommendation	Rating of Recommendation
5.3 Antihypertensives in the management of stable hypertension			
5.3.1	Evidence based recommendation	Oral agents labetalol, methyldopa and/or nifedipine can be used in managing stable hypertension in pregnancy (gestational hypertension, chronic hypertension, non-severe hypertension in preeclampsia). The choice of agent should be individualised based on access to agent, women's clinical history and through a shared informed decision-making process (Flowchart 5.3).	2C
5.3.2	Practice point	In addition to the agents above, oral hydralazine can be used in managing stable hypertension in pregnancy.	PP
5.4 Timing of birth in women with chronic hypertension or gestational hypertension	Evidence based recommendation	There remains inadequate data to suggest the need for planned birth between 36 and 37^{+6} weeks gestation in women with gestational or chronic hypertension. The decision on the timing of birth should be individualised based on women's clinical and obstetric history and through a shared, informed decision-making process.	2D
5.5 Use of ambulatory blood pressure monitoring (ABPM) in pregnancy			PP
5.5.1	Practice point	Ambulatory blood pressure should be considered to exclude white coat hypertension in women with isolated hypertension in pregnancy (in the absence of an established diagnosis of preeclampsia, chronic hypertension, or gestational hypertension).	PP
5.5.2	Practice point	Where there are poor pregnancy outcomes in current or previous pregnancies that could not be explained by other factors, we suggest an ABPM to assess for masked hypertension.	PP

Part 6: Management of preeclampsia

Clinical question/Location in Guideline	Type of Recommendation	Recommendation	Rating of Recommendation
6.1 Antihypertensives in the management of stable hypertension in preeclampsia	Evidence based recommendation	Oral agents labetalol, methyldopa and/or nifedipine can be used in managing stable hypertension in pregnancy (gestational hypertension, chronic hypertension, non-severe hypertension in preeclampsia). The choice of agent should be individualised based on access to agent, women's clinical history and through a shared informed decision-making process. (Flowchart 5.3).	2C
6.2 Management of acute (severe) hypertension (≥160/110mmHg) in preeclampsia			
6.2.1	Evidence based recommendation	Short acting agents such as IV hydralazine, IV labetalol, oral immediate release (IR) nifedipine or IV diazoxide should be used in managing acute hypertension (Flowchart 6.2). The choice of short acting antihypertensive should be based on the unit's access and familiarity with agent of choice.	2C
6.2.2	Practice Point	Acute (severe) hypertension should be treated to a target of <160/110 mmHg.	PP
6.3 Timing of birth in preeclampsia			
6.3.1	Evidence based recommendation	Birth plan should be initiated for women with preeclampsia at ≥37 weeks.	2D
6.3.2	Evidence based recommendation	Decision for expectant management or immediate induction of birth in women with preeclampsia <37 weeks should be made based on maternal and fetal clinical stability in weighing the risk preterm birth (Table 6.3.2). The decision should be made through an informed shared decision-making process with the women.	2D

Part 6: Management of preeclampsia

Clinical question/Location in Guideline	Type of Recommendation	Recommendation	Rating of Recommendation
6.3.3	Practice point	Birth should be considered at any gestation in the event of deterioration (Table 6.3.2).	PP
6.3.4	Practice point	Women with preeclampsia at risk of early preterm birth (<34 weeks) should be considered for a transfer to a unit with appropriate level of neonatal and paediatric care.	PP
6.3.5	Evidence based recommendation	There is limited data to support the use of angiogenic biomarkers in determining timing and indication of birth (Recommendations 4.2 and 4.3).	2B
6.3.6	Evidence based recommendation	Where appropriate, consider the use of corticosteroid and magnesium sulphate in women at risk of early preterm birth (Recommendations 6.5 and 6.6).	2A
6.4 Corticosteroid in women with preeclampsia at risk of preterm birth			
6.4.1	Evidence based recommendation	Use of corticosteroid (either betamethasone or dexamethasone) is recommended in women with preeclampsia who are at risk of birth <34 weeks gestation.	2A
6.4.2	Evidence based recommendation	There is insufficient data to recommend routine use of corticosteroid in women with preeclampsia who are at risk of birth between 34-36 weeks gestation. The use of corticosteroid in this setting should be individualised based on clinical assessment and through an informed shared decision- making process with the women.	2B
6.4.3	Evidence based recommendation	Redosing of corticosteroid can be considered in women with preeclampsia who remain at risk of birth <34 weeks gestation 7-14 days following initial single course of corticosteroid. The decision on redosing should be made through an informed shared decision-making process with the women.	2A
6.5 Use of magnesium for fetal neuroprotection in women with preeclampsia at risk of preterm birth			
6.5.1	Evidence based recommendation	The use of magnesium sulphate for fetal neuroprotection in women with preeclampsia at risk of preterm birth <30 weeks gestation is strongly recommended.	2A
6.5.2	Practice point	Decision on the use of magnesium sulphate for fetal neuroprotection in women with preeclampsia at risk of birth between 30-34 weeks gestation should be individualised based on clinical assessment and through a shared informed decision-making process with the women.	PP
6.6 Magnesium sulphate in minimising the risk of eclampsia and treating eclampsia			
6.6.1	Evidence based recommendation	Prophylactic magnesium sulphate with an intravenous loading dose of 4g followed by maintenance at 1g/hr for 24 hours in total or time of last seizure is strongly recommended in women at risk of eclampsia or recurrent eclampsia. (Flowchart 6.6).	1A
6.6.2	Evidence based recommendation	There is inadequate evidence to support an alternative magnesium regimen or the use of anticonvulsants for the prevention of eclampsia.	2C,2D
6.7 Corticosteroid in the management of HELLP syndrome	Evidence based recommendation	The use of corticosteroid in managing HELLP syndrome is not recommended until more data are available.	2C
6.8 Thromboprophylaxis in women with preeclampsia			
6.8.1	Practice point	Women's risk of venous thromboembolism (VTE) and need for VTE prophylaxis should be made based on the current local hospital or state-based protocol or policy. In the absence of which, the included VTE risk in pregnancy assessment tool (Flowchart 6.8) can be utilised.	PP
6.8.2	Practice point	Risk assessment should be conducted in early pregnancy (first trimester) or pre-conception, at every admission into hospital, at the time of diagnosis of preeclampsia or new intercurrent medical issue and in the immediate postpartum period.	PP

Part 6: Management of preeclampsia

Clinical question/Location in Guideline	Type of Recommendation	Recommendation	Rating of Recommendation
6.8.3	Practice point	Concurrent use of LMWH for VTE prevention and aspirin for preeclampsia prevention should be done in weighing the benefits and risks to the maternal and fetal outcomes and should be done through a shared decision-making process with the women.	PP
6.9 Plasma expansion in women with preeclampsia	Evidence based recommendation	Routine plasma expansion for management of preeclampsia is not recommended until more data are available.	2C

Part 7: Immediate/short term postpartum care

Clinical question/Location in Guideline	Type of Recommendation	Recommendation	Rating of Recommendation
7.1 Routine use of non-steroidal anti-inflammatory drugs (NSAIDs) for postpartum pain management in women with preeclampsia			
7.1.1	Evidence based recommendation	The routine use of non-steroidal anti-inflammatory drugs (NSAIDs) in postpartum pain management in women with preeclampsia is conditionally recommended against until more data on safety are available.	2C
7.1.2	Practice point	Short term, inpatient use can be considered in the absence of alternative analgesics.	PP
7.2 Routine use of loop diuretics in managing postpartum hypertension in women with preeclampsia	Evidence based recommendation	The short-term use of loop diuretics in the inpatient setting, can be considered where clinically indicated (ie pulmonary oedema, clinical features of fluid overload) in managing postpartum hypertension in women with preeclampsia.	2C
7.3 Antihypertensives in postpartum period	Evidence based recommendation	There remains inadequate data to suggest the superiority of a single agent or group of agents in selecting antihypertensives for the management of hypertension in the postpartum period. The choice of antihypertensive (beta-blockers, methyldopa, hydralazine, nifedipine, enalapril, clonidine) should be made through a shared decision-making process, particularly in breastfeeding/lactating women.	2D

Part 8: Long term postpartum care

Clinical question/Location in Guideline	Type of Recommendation	Recommendation	Rating of Recommendation
Long term post- partum care			
8.1.1	Practice point	Women should be informed of the long-term risks associated with preeclampsia, gestational hypertension and chronic hypertension and the importance of postpartum follow up prior to discharge from hospital (Information sheet 8.1).	PP
8.1.2	Practice point	Women should be reviewed by a health care provider within 1 week of discharge from hospital to ensure stable blood pressure post discharge.	PP
8.1.3	Practice point	At 3-6 months postpartum, a follow up review of blood pressure (consider a 24-hour blood pressure monitor if not previously done), urine protein assessment (uACR and/or uPCR), BMI and metabolic profile (fasting blood glucose and fasting cholesterol assessment) should be considered. Interventions for any abnormalities (ie: further investigations, specialist referral, weight management, lifestyle changes, smoking cessation) should be discussed (Clinician check list 8.1).	PP
8.1.4	Practice point	A yearly follow up of blood pressure, urine protein assessment, BMI and metabolic profile should be considered in identifying early abnormalities in the first 5-10 years postpartum (Clinician check list 8.1).	PP
8.1.5	Practice point	At every review, women should be opportunistically screened for postpartum depression and anxiety. The Edinburgh Postnatal Depression Scale (EPDS) can be used as an initial screening tool (Clinician check list 8.1).	PP
8.1.6	Practice point	At every review, women should be counselled on the risk of preeclampsia and gestational hypertension in subsequent pregnancies and the importance of pre-conception medical optimisation, contraception (where indicated) and risk minimisation strategies (ie: prophylactic aspirin) (Clinician check list 8.1).	PP